## In the Claims

1. (Previously Amended) A method for adding a new network node to a network, said method comprising:

operating said new network node to discover neighboring nodes in the network;

confirming symmetric communication links to neighboring nodes in the network;

obtaining a logical identifier and selecting a parent node in the network for the new network node; and

operating said new network node to broadcast status information to the neighboring nodes in the network;

wherein each node has a plurality of transmit periods and receive periods and wherein said confirming symmetric communication links to neighboring nodes in the network comprises:

causing said new network node to send out an alarm message, informing neighboring nodes to suspend transmission for a period;

causing said new network node send a "Connection Request" message to the neighboring nodes; and

causing the neighboring nodes to send a "Connection Response" message in their next transmit periods, thereby confirming that a symmetric link is in place.

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2. (Original) A method an accordance with claim 1, wherein said operating said new network node to discover neighboring nodes in the network comprises:

listening to messages transmitted between neighboring nodes in the network;

collecting information about its immediate neighbors by listening to the messages; and

recording the information in an initial neighborhood list.

- 3. (Previously Amended) A method in accordance with claim 2, wherein said information collected includes neighboring nodes' logical identifiers and times they will receive or transmit messages.
- 4. (Previously Amended) A method in accordance with claim 3, wherein said information collected includes depth information of the neighboring nodes if available and load information of the neighboring nodes if available.
- 5. (Cancelled)
- 6. (Cancelled).
- 7. (Cancelled).

8. (Original) A method in accordance with claim 1, wherein said network includes a cluster of nodes having a Cluster Head and operating under a Cluster Tree Protocol and wherein said obtaining a logical identifier and selecting a parent node in the network for the new network node comprises:

selecting a node from the neighborhood list as the parent node;

causing said new network node to send a "Logical ID Request" message to the Cluster Head;

causing said Cluster Head to send a "Logical ID Response" message to the parent node; and

causing the parent node to relay the "Logical ID Response" message to the new network node. 9. (Original) A method in accordance with claim 1, wherein said network includes a cluster of nodes having a Cluster Head and operating under a Cluster Tree Protocol and wherein said obtaining a logical identifier and selecting a parent node in the network for the new network node comprises:

identifying a neighboring node that is a Dedicated Mediation Device;

sending a "Neighborhood List Request" message to the Dedicated Mediation Device;

receiving a "Neighborhood List Response" message from the Dedicated Mediation Device, the "Neighborhood List Response" message providing a list of the Dedicated Mediation Device neighbors;

deleting nodes from the neighborhood list that do not appear on the Dedicated Mediation Device's neighborhood list;

selecting a node from the neighborhood list as the parent node;

causing said new network node to send a "Logical ID Request" message to the Cluster Head;

causing said Cluster Head to send a "Logical ID Response" message to the parent node; and

causing the parent node to relay the "Logical ID Response" message to the new network node.

- 10. (Original) A method in accordance with claim 9, further comprising storing deleted node information in a non-synchronized neighborhood list of the new network node.
- 11. (Original) A method in accordance with claim 1, wherein said network includes a cluster of nodes having a Cluster Head and operating under a Cluster Tree Protocol and wherein said obtaining a logical identifier and selecting a parent node in the network for the new network node comprises:

selecting a node with the least depth from neighborhood list as the parent node;

causing said new network node to send a "Logical ID Request" message to the Cluster Head;

causing said Cluster Head to send a "Logical ID Response" message to the parent node; and

causing the parent node to relay the "Logical ID Response" message to the new network node.

12. (Original) A method in accordance with claim 11, wherein if more than one node from the neighborhood list has the least depth, a node with the least load is selected as the parent node.

13. (Original) A method in accordance with claim 1, where in said network includes a cluster of nodes having a Cluster Head and operating under a Cluster Tree Protocol and wherein said obtaining a logical identifier and selecting a parent node in the network for the new network node comprises:

identifying a neighboring node that is a Dedicated Mediation Device;

sending a "Neighborhood List Request" message to the Dedicated Mediation Device;

receiving a "Neighborhood List Response" message from the Dedicated Mediation Device, said "Neighborhood List Response" message providing a list of the Dedicated Mediation Device's neighbors;

deleting nodes from the neighborhood list that do not appear on the list of the Dedicated Mediation Device's neighbors;

selecting a node with the least depth from the neighborhood list as the parent node;

causing said new network node to send a "Logical ID Request" message to the Cluster Head;

causing said Cluster Head to send a "Logical ID Response" message to the parent node;

causing the parent node to relay the "Logical ID Response" message to the new network node.

- 14. (Original) A method in accordance with claim 13, wherein if more than one node from the neighborhood list has the least depth, a node with the least load is selected as the parent node.
- 15. (Original) A method in accordance with claim 1, where in said network includes a cluster of nodes have a Cluster Head and operating under a Cluster

Tree Protocol, wherein said operating said new network node to broadcast status information to the neighboring nodes in the network comprises:

operating said new network node to monitor message between neighboring nodes in the network;

updating the timing information from the neighboring nodes in the network; and

sending a "1st Hello" message to each neighbor node.

- 16. (Original) A method in accordance with claim 15 wherein said "1st Hello" message includes the new network node's logical identifier.
- 17. (Original) A method in accordance with claim 16, wherein said "1st Hello" message includes the new network node's depth and load parameters and, optionally, the identifier of its parent node.
- 18. (Original) A method in accordance with claim 16, wherein said "1st Hello" message includes the logical identifier of a Dedicated Mediation Device in the area of the new network node.
- 19. (Original) A method in accordance with claim 18, wherein neighboring nodes having the same Dedicated Mediation Device as the new network node add the new network node to their neighborhood lists.

- 20. (Original) A method in accordance with claim 18, wherein neighboring nodes have Non-synchronized neighborhood lists and neighboring nodes having a different Dedicated Mediation Device to the new network node add the new node to their Non-synchronized neighborhood list.
- 21. (Previously Amended) A method in accordance with claim 1, wherein said status information comprises a logical identifier and depth and load parameters of the new network node, and, optionally, an identifier of the parent node.

22. (Previously Amended) A method for adding a new network node to a network, said method comprising:

identifying neighboring nodes that have symmetric communication links with the new network node;

generating a neighborhood list of neighboring nodes that have symmetric communication links with the new network node:

operating said new network node to broadcast status information to the neighboring nodes in the network; and

operating said new network node to send messages to said neighboring nodes and to receive messages from said neighboring nodes;

wherein the network includes at least one Dedicated Mediation Device and wherein said neighborhood list comprises a first neighborhood list containing information about nodes sharing the same Dedicated Mediation Device as the new network node and a second neighborhood list containing information about nodes having a different Dedicated Mediation Device.

23. (Original) A method in accordance with claim 22, further comprising: periodically listening to network messages;

retrieving information from said network messages; and

updating the neighborhood list according to said information.

24. (Original) A method in accordance with claim 23, wherein said information includes the identifiers and the receive and transmit times of said neighboring nodes.

- 25. (Original) A method in accordance with claim 23, further comprising transmitting a "Hello" or "W" message from said new network node to all of the neighboring network nodes.
- 26. (Original) A method in accordance with claim 23, wherein said network messages include "Query" messages.
- 27. (Original) A method in accordance with claim 22, wherein the new network node operates as a Distributed Mediation Device.
- 28. (Cancelled)
- 29. (Cancelled)
- 30. (Cancelled)
- 31. (Cancelled)
- 32. (Original) A method in accordance with claim 22, wherein operating said new network node to send messages to said neighboring nodes comprises:

transmitting a "Req. Sync" message from said new network node to a Mediation Device;

transmitting an "Ack" message from the Mediation device back to the new network node; and

relaying the "Req. Sync" message to the appropriate neighboring network node.

33. (Original) A method for a new network node to identify Mediation Devices in a network containing normal and non-synchronized neighboring nodes, said method comprising:

determining if a neighboring node switch between being a nonsynchronized neighboring node and a normal neighboring node; determining the Mediation Devices to be a Dedicated Mediation Device if the neighboring node does not switch between being a non-synchronized neighboring node and a normal neighboring node; and

determining the Mediation Devices to be a Distributed Mediation Device if the neighboring node switches between being a non-synchronized neighboring nodes and a normal neighboring node. 34. (Cancelled)